

Meeting of the Decommissioning Project Community Workgroup
Tuesday, April 12, 2005
Erie County Senior Center (Sandusky)

The meeting began at 7 p.m. Present were Workgroup members John Blakeman, Janet Bohne, Anne Hinton, Ralph Roshong, Bob Speers and Mary Warren, along with the following NASA representatives: Vernon "Bill" Wessel, Director of Safety and Mission Assurance, NASA Glenn; Sally Harrington, Public Affairs Specialist, NASA Glenn; Mike Blotzer, Chief of Environmental Management, NASA Glenn; Manny Dominguez, Chief of Safety, NASA Glenn; Keith Peecook, Senior Project Engineer, NASA Plum Brook; Peter Kolb, Project Environmental Manager, NASA Plum Brook and Rich Kunath, Chief of the Plum Brook Station Management Office. Also present were Gary Sly and Jay Clawson of project general contractor MWH Constructors and Susan Santos and Michael Morgan of FOCUS GROUP. There were 11 members of the public in attendance including NASA retirees Len Homyak, Jim Martz and Paul Mainzer.

Bill Wessel provided welcoming remarks and introduced the meeting participants. He said that Keith Peecook would be making several project presentations and that Rich Kunath would also speak. He noted that tonight's quarterly Workgroup meeting was the 23rd and that it was being videotaped by Channel 81 of Buckeye CableSystem for future airing. He added that one of the reasons the project was "effective, in terms of letting folks know about safety," was because of the outreach efforts of Sally Harrington of NASA Glenn and Susan Santos of FOCUS GROUP. Susan Santos spoke next, noting that Decommissioning Project Manager Tim Polich was unable to attend tonight's meeting, then reviewed the agenda and asked for and receiving acceptance of the minutes from the January meeting. She then introduced Keith Peecook, who provided a Project Update.

Project Update

Keith reported that segmentation of the reactor tank was completed in February. He showed a series of slides that demonstrated the progress of segmentation, from the time before this project activity began, through the latter stages of the work. He observed that the cutting of the reactor tank was done "like peeling an onion, from the inside out." He also provided some background information for attendees less familiar with the project, observing that the reactor tank was 35 feet tall and 9 feet in diameter, made of steel from one to four inches thick, and surrounded with a concrete bioshield, which was intended to provide an extra measure of protection for workers in the event of an accident (which never occurred) when the reactor was operational. He added that between reactor internal removal operations, which began in August 2003 and ended in June 2004, and reactor tank segmentation, workers had removed, packaged and shipped some 80 tons of material, most of it comprised of steel and aluminum.

Keith noted that NASA had to remove asbestos from areas around the reactor tank and that workers from asbestos abatement subcontractor Toltest had worked closely with their counterparts from Wachs Technical Services, Inc., the segmentation subcontractor, on these last stages of segmentation. He said all pieces of the reactor tank had been safely packaged and shipped to the Envirocare licensed disposal facility in Utah. All that is left of what was the reactor tank area, he reported, was the bioshield, whose concrete is reinforced by steel rebar. Keith showed slides of the bioshield and said NASA was taking core samples of the rebar in the bioshield over the next few weeks, to determine the levels of radiation it contains. He noted that some of the steel in the bioshield had become activated due to its proximity to the reactor but said that if the samples showed low activation levels, NASA could remove some of the metal and leave the concrete bioshield in place, since it is located more than three feet below grade. If

levels are much higher than expected, Keith said there would be a “more aggressive removal of the bioshield.” He added that asbestos removal from the bioshield is continuing.

Fixed Equipment Removal

Keith reported that fixed equipment removal (FER), which is nearly complete in most Reactor Facility structures, continues in both the Containment Vessel Annulus and in the Hot Retention Area. The annulus, he said, is an area of the Containment Vessel that extends from ground level to 25 feet below grade, outside the quadrants and canals of the Containment Vessel. When the reactor was operational, the annulus contained components, including piping, compressors and electronic control systems, which were used to help operate reactor experiments. He said one of the reasons this work was not completed earlier was because the crane needed for removal operations was used first for segmentation work. He added that FER in the annulus is about 60% complete and should be done by the end of April, part of “getting everything down to the bare walls” in all Reactor Facility buildings.

FER is also being conducted in the Hot Retention Area (HRA), a concrete vault located 90% underground and adjacent to the Waste Handling Building at the rear of the Reactor Facility. Keith said the vault contains eight steel tanks, each of which could hold up to 60,000 gallons of water that had high levels of radiation from reactor operations. The water was held in these tanks until the radiation levels had decayed sufficiently to allow the water to be released or reused. The above-grade portion of the vault contained a gallery area that held the wiring and piping to support the holding tank operations when the reactor was operational. The gallery was surrounded by an earthen berm that provided shielding. Keith reported that the equipment from the upper gallery has been removed, as has the berm. Workers have cut an opening in the vault ceiling to facilitate the removal of the tanks, which are being segmented. Keith said removal operations in the HRA are expected to be complete by early summer.

Keith also reported that NASA has made three shipments of water containing low-level radiation. Workgroup member John Blakeman asked where the water had come from and Keith said that even though all the Reactor Facility’s process piping systems were drained when the facility was shut down in 1973, small amounts remained in the pipes, adding that there has also been 30 years worth of condensation within the facility’s buildings. “When you shut a building down for that long,” Keith observed, “water collects.” As a result, he said workers have been collecting water for the last few years in 50-gallon drums. So far this year, he said NASA has worked with subcontractor Duratek to have the latter remove the radioactive water in three tanker truck shipments, totaling about 10,000 gallons, to a Duratek disposal facility in Tennessee. He expects there will be one more shipment.

Final Status Survey & Decontamination of Embedded Piping

Keith next spoke about the Final Status Survey (FSS), which NASA must undertake in order for NASA to prove to the U.S. Nuclear Regulatory Commission that it has achieved the required cleanup goal at the end of the project. This will allow NASA to terminate its Reactor Facility license with the NRC. The goal, he said, is to make the site safe for any use by achieving the “resident farmer scenario” in which radiation levels at the end of decommissioning are at background levels, meaning that theoretically a farmer could live on the land which was once the Reactor Facility site, drink its groundwater and grow crops there. With fixed equipment removal nearly complete, the next step for NASA is to undertake the decontamination of all Reactor Facility buildings before they can be demolished. Once the decontamination work is performed, NASA must conduct radiological surveying of building walls, floors and ceilings, “inch by inch” to ensure they meet cleanup levels known as Derived Concentration Guidelines (DCGL’s).

Keith explained that NASA had submitted its Final Status Survey Plan to the NRC in December 2004, “with eight pounds worth” of supporting documentation, and that the NRC will be reviewing the plan over the next several months. Since December, a group of Decommissioning Team members, known as the FSS Group, have put in place a set of procedures for undertaking the FSS. Earlier this year, he said NASA was confident enough that these procedures would be approved by the NRC that FSS Team could begin its initial work. The first place in which this work was conducted was a tunnel that connected Advanced Test Services (ATS) Building with the Containment Vessel. Keith said this area was chosen because, once it is decontaminated, it could be easily closed off to prevent foot traffic and possible recontamination. He said that surveying the bare, decontaminated walls of this tunnel had given the FSS Group a chance to test out its procedures, and was “a good shakedown for us.” FSS work has next been scheduled for the Reactor Office and Laboratory Building (ROLB) adjacent to the Containment Vessel. He also noted that there is an article on FSS work in the April edition of the quarterly Decommissioning Project Newsletter.

Keith then pointed out that FSS work must proceed slowly, because of some issues concerning the decontamination of what is termed embedded piping – piping systems encased in concrete and located at least three feet below grade in Reactor Facility Buildings. He said NASA’s intention, as published in the Decommissioning Plan, has been to demolish all buildings to three feet below grade and backfill the basements with clean fill. As part of this plan, NASA had also intended to survey all embedded piping, decontaminate the parts of the piping where there was contamination (such that the pipes meet cleanup levels), then fill them with grout and leave them in place. He said NASA had begun conducting a radiological survey of the piping systems (about 25,000 feet overall) last December, using a snake-like probe to which a video camera and radiation monitor had been attached. Workers surveyed more than 5,000 feet of the piping between December and February, with Keith noting that the first system to be surveyed consisted of pipes 24 inches in diameter – and encased in up to 10 feet of concrete, with some located 40 feet below grade. These pipes were the primary coolant lines from the reactor to the Primary Pump House, the location of the reactor’s cooling system.

According to Keith, the initial results of the surveying were good, with the large pipes shown to be in good condition and the radiation levels higher at the end of the pipe, which had once connected to the reactor. He also said workers had surveyed smaller piping systems, ranging from 4 to 10 inches in diameter. NASA retiree Len Homyak asked how much of the 24-inch pipe had been probed, and Keith said 340 feet. John Blakeman asked how NASA had located the pipes and Keith responded that they had all been shown on architectural drawings of the Reactor Facility. But he did note that on some drawings, some smaller pipes were shown to have “nice sweep turns,” when in reality, the probe found that the pipes had been connected at 90 degree angles (in floor drains in the quadrants and canals). He said this would make some pipes harder to clean, resulting in higher costs. More importantly, he said, some survey investigation of the smaller pipes, in both the process piping and carbon steel drains, revealed they were in poorer condition than what had been anticipated and might have contamination levels greater than the target cleanup levels.

Keith stated that because of these concerns, NASA decided in late February to halt decontamination work and take a fresh look at the “clean in place” approach that had been planned. NASA decided to consider other approaches, perhaps in combination, within different areas of the Reactor Facility. He reported that NASA had assembled a team consisting of Decommissioning Team personnel, as well as NASA retirees and an outside consultant. The team is considering several approaches based on the cost and practicality of the work, including: cleaning the piping and leaving it in place: physically cutting into the floor and removing the

piping; removing some piping and leaving the rest in place; or demolishing entire buildings including the piping, then removing it and the other debris as low-level radioactive waste (LLRW) and sending it all to Envirocare.

Keith said that several factors have to be evaluated, noting that cleaning the pipes and leaving them in place can cost as much as \$200 per foot, with the possibility that some pipes might have to be cleaned more than once in order to reach the required cleanup levels. On the other hand, he observed, cutting out some of the piping could compromise the structural integrity of some buildings and cause a safety hazard, and that while demolishing the buildings and removing the pipes with the other debris would save on time and decontamination costs, it would dramatically increase the costs of LLRW packaging, shipping and disposal. He said that as a result of the work stoppage, 60 workers had been released until a determination can be made on how to proceed. He said the Embedded Piping Team is working on a number of tasks including a “proof of process” for cleaning the pipes; evaluating structural details on piping systems and their possible removal; analysis of additional “scale samples” from the pipes to determine what radioactive isotopes are present, and to deal with the issue of cracks in the concrete surrounding the pipes that may also require cleanup. He anticipated that the team would have some options in place by July. “We’re going to take a hit in terms of cost and time,” he stated. “But it’s the right thing to do,” noting that NASA would still reach the goals of “unrestricted release.”

Keith compared the delay to one which occurred early in 2003, when NASA had first anticipated undertaking segmentation activity. At the time, NASA was concerned about the levels of radiation to which segmentation workers might be exposed, and decided to postpone the work in order to develop a better ALARA (As Low As Reasonably Achievable) Plan to better protect the workers. Keith noted that even though the start of segmentation was delayed by six months, it was a prudent decision, as segmentation was conducted safely, with much lower levels of exposure than had initially been anticipated.

Upcoming Work

In addition to resolving the approach to the decontamination of the embedded piping, Keith said NASA is undertaking other decommissioning activities, including the completion of FER in the Containment Vessel and Hot Retention Area and the start of FER – including two large, steel holding tanks – in the Cold Retention Area, which performed a function similar to the HRA when the reactor was operational. This work will begin later this spring. Other upcoming work includes the excavation, packaging and shipment of soils from several areas adjacent to the Reactor Facility (all within the Plum Brook Station fence line) which had become contaminated as a result of reactor operations, and which surveying results indicate are at radiation levels in excess of the required cleanup levels. Soil cleanup is scheduled to begin on May 2.

Two areas where the soil remediation will be conducted include the bottom of the Emergency Retention Basin (an outdoor holding area which formerly had a capacity of five million gallons) and along the banks of the Pentolite Ditch. Keith said workers would dig out the bottom of the Emergency Retention Basin and also dam up the Pentolite Ditch and clean up the banks, which currently hold contaminated materials dredged from the ditch itself. He added that the soils would be placed in safe, tight containers and sent to Envirocare. To date, he reported that NASA has sent close to 8.5 million pounds of LLRW to Envirocare, a total he said would be doubled with the shipment of the contaminated soils. Over the next several months, he said there will be up to three truck shipments per day, leaving Plum Brook Station (PBS) by way of the Scheid Road gate.

Former NASA employee Dick Miller had a question about fixed equipment removal in the

Sub-Pile Room, located below the former reactor tank area, asking how equipment there is being removed. Keith said workers are using a special chain saw, which is also being utilized in the Containment Vessel Annulus. He added that NASA has also removed one million pounds of lead from locations throughout the Reactor Facility.

Cost/Budget Update

After completing the Project Update, Keith presented information on project costs to date. He reported that the Decommissioning Project had received funding for Fiscal Year 2005 operations as planned, but that additional work above and beyond what was planned had to be factored in, especially the work stoppage and evaluation of the decontamination of the embedded piping, and potential added costs for its decontamination. He added that as of July 2004, NASA had estimated that the project would be completed for \$131 million, but due to delays in the completion of segmentation work and other costs, including FER in the HRA, the current estimate is now \$144.7 million (not including additional costs for the embedded piping). NASA's original budget estimate was that the project would be completed for less than \$160 million.

John Blakeman asked if there were any chance that NASA might find a solution to the embedded piping issue that would actually save money. Keith said this was unlikely, due to the fact that NASA had to release 60 workers while the best approaches were being considered. He added that there would be remobilization costs once the work resumed, as well as the cost of finding new workers to replace some who have since gone on to other jobs. But he also said that NASA is still looking to complete all decommissioning work by the end of 2007, noting that the project could be completed sooner if NASA adopts a "rip and ship" approach to the embedded piping, taking it out and sending it to Envirocare rather than cleaning it in place. This would, however, substantially increase LLRW shipping and disposal costs.

Community Relations Update

Sally Harrington of NASA Glenn followed with a Community Relations Update. She noted that the quarterly newsletter had been sent on April 7 to the 2,300 people and organizations on the Decommissioning Project mailing list, and several Workgroup members said they had received their copy. She also pointed out that this edition and future ones, will have a somewhat different design, since NASA is seeking to provide a consistent "look" to all of its print material. She also reported that NASA personnel from PBS and the Marshall Space Center in Alabama are working with private contractors on new testing of the Solar Sail, which had an initial phase of testing at the PBS Space Power Facility last summer. Sally said that from April through July NASA is testing two designs of the sail (made of ultra thin Mylar material), which NASA engineers hope will be able to capture the heat of the Sun to power vehicles into deep space.

Sally subsequently discussed the announced the intentions of NASA Headquarters to cut funding from aeronautics programs at NASA Glenn and said there would be an impact on PBS, reporting that Glenn Center cannot fund PBS operations after September 30 of this year. She said Glenn is very aware of the unique test facilities at PBS and that Center Director Dr. Julian Earls has raised the issue of PBS funding needs at the NASA headquarters level. Sally then introduced Rich Kunath, Chief of the PBS Management Office, to speak and answer Workgroup questions. Rich noted in February that he felt there would be no impact at PBS as a result of the proposed aeronautics cuts at Glenn. But, he added, "three days later, I was told there was a ripple effect" in terms of the availability of discretionary funding at Glenn that had been used to help subsidize PBS operations.

Rich said he felt in February, and still does now, that PBS test sites such as the Space Power, the "K-Site" and B-2 (both Propulsion) Facilities, would be needed to help fulfill the Bush

administration's vision for space exploration, and that he has approached three NASA "Mission Directorates" – including Exploration, Science and Space Operations – about obtaining some of their funding in return for making the PBS sites available to them, saying these directorates "would be the beneficiaries of our research facilities." He has also raised the funding issue to Jim Jennings of NASA Headquarters. Rich said he is confident that these three directorates would heavily utilize the PBS facilities starting in 2009, especially Exploration Systems but the issue is trying to obtain funding so that PBS does not have to shut down permanently or be "mothballed" (as it was from 1973 to 1988) until funding becomes available.

Workgroup member Janet Bohne asked how many employees would be affected by a PBS shutdown and Rich answered that 9 civil service workers would be impacted as well as 57 contractor employees from the Plum Brook Operations Support Group (PBOSG), many of whom are supporting the Reactor Facility Decommissioning Project operations. He said it would not be until this June or July that he would know what funding might be available for FY 2006. NASA retiree Len Homyak asked if any non-NASA clients, such as the European Space Program or the U.S. Air Force, might have projects coming on line. Rich said PBS was scheduled for testing by Lockheed-Martin and Boeing, but not until 2008. He noted that in the future NASA would also be developing and testing a new Crew Exploration (seen as an eventual replacement for the Space Shuttle) and going forward with Project Prometheus – a deep-space nuclear propulsion system – but these are not scheduled to come on line during the period when PBS needs interim funding.

Rich noted that many private contractors would be involved in Exploration Mission work but added "we have to see how we'd fit into their needs." He also pointed out that nuclear propulsion testing would go on whether PBS were involved or not, but that PBS would be in a position to help advance research in this program. He also said that representatives from the U.S. Navy's Nuclear Program have visited the PBS K-Suite and B-2 facilities so far this year. Workgroup member Mary Warren asked if PBS were still considering an Open House in 2006 (which would be the 50th anniversary of NASA operations there) as Rich had mentioned at last October's Workgroup meeting. Rich said that this would depend on future funding options, adding, "If we get the go sign (to continue operations), we'll go ahead with the Open House."

General Questions and Topics for Next Meeting

John Blakeman asked Keith about the status of the control rods containing Cadmium, which were removed last year from Hot Dry Storage and have for the past several months been stored in a cask on a flatbed truck. Keith reported that NASA had recently received permission from the NRC to move the rods to a temporary storage cask structure at PBS that NASA built last year. The rods will be removed from the cask belonging to Duratek and into the storage cask, which Keith says will improve safety. NASA needs to find a permanent disposal site for the rods, which are Class C waste – the highest level of LLRW – which is normally accepted at Barnwell licensed disposal facility in South Carolina, where NASA sent six shipments of reactor waste from segmentation). However, because the rods contain Cadmium, they are considered "mixed waste" and therefore cannot be accepted at Barnwell. Because the waste is above Class A LLRW, the rods cannot be disposed of at Envirocare, which does accept mixed waste – but only if it's Class A. Keith said NASA expects to eventually be able to dispose of the rods at a U.S. Department of Energy facility in Idaho or Washington State.

Susan Santos noted that tonight's meeting would be the last attended by Mike Blotzer, currently Chief of the NASA Glenn Environmental Management Office. He is leaving Glenn to take a similar position at the Stennis Center in Mississippi. Mike then spoke briefly, thanking the Workgroup, saying its members had to "shape the Environmental Assessment" for the Decommissioning Project and had a "significant impact on the Historic Preservation Program."

Mike's purview has included NASA Glenn's Historic Preservation Program and his office funded the documentary video "Of Ashes and Atoms" which contains interviews with Workgroup members John Blakeman, and Janet and Mark Bohne.

Susan said the next Workgroup meeting would be on Tuesday, July 19 at the Huron Public Library. Topics will include an update on the decontamination of embedded piping, a budget and cost update, and a presentation on cleanup operations at what was formerly the Ordnance Facility, which during World War II stood on land that is now part of Plum Brook Station. John, Janet and Mark will make the presentation, as they are also members of the Ordnance Works Restoration Advisory Board (Mark is the Citizen Co-Chair). This cleanup is being funded by the U.S. Army Corps of Engineers and is separate from NASA PBS operations, including the Decommissioning Project. There may also be, in October, another update on environmental monitoring and Final Status Survey work. Susan also said that when NASA hears from Channel 81 on the airing dates for the videotape of the Workgroup meeting, FOCUS GROUP would contact Workgroup members and also put the dates and times on the 24-hour, toll free Information Line.

The meeting adjourned at 8:30 p.m.